

REMARKS

Claims 1-10 and 12-20 are pending in the application. Claim 11 has been withdrawn. Independent claims 1, 7, 12, and 17, and dependent claim 19 have been amended herein. Favorable reconsideration of the application, as amended, is respectfully requested.

I. REJECTIONS OF CLAIM 19 UNDER 35 U.S.C. § 112

Claim 19 stands rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement. The Examiner contends that “the specification provides no guidance as to how one of skill would alter the verification flow in various amounts.” The Applicants respectfully disagree and point to, *inter alia*, step 11 of Figure 4, step 31 of Figure 5, and the corresponding descriptions in the specification, such as Paragraphs 76-78 of the written description, in addition to Paragraphs 81 and 104.

Claim 19 is further rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Examiner contends that “there is insufficient antecedent bases for the phrase ‘altering the verification flow.’” In claim 19, altering is an action verb signifying a process step. The thing being altered (i.e. changed) is the verification flow, which first appears in claim 17 upon which claim 19 depends, and thus has proper antecedent basis.

Claim 19 has been further amended to clarify the step of altering the verification flow.

Thus, the Applicants believe that the Examiner’s rejection has been addressed and request that the rejections under 35 U.S.C. § 112 be now withdrawn.

II. REJECTIONS OF CLAIMS 1-5, 7, 9, 10, 12-17, 19, 20 UNDER 35 U.S.C. § 102

Claims 1-5, 7, 9, 10, 12-17, 19, 20 stand rejected under 35 U.S.C. § 102 as being anticipated by Ollivier (US 6,450,200). The Applicant believes that all pending claims are allowable for at least the following reasons. Withdrawal of the rejection is respectfully requested.

Independent claims 1, 7, 12, and 17 have been amended herein to further clarify one of the aspects of the invention. Independent claim 1 requires a flow control device having a deviation measurement/control component that “fixes an aperture of the flow control valve

mechanism at a selected aperture opening and measures changes in the pressure using the pressure detector while the channel is closed by the first opening and closing valve, and calculates the deviation from the standard level associated with the selected aperture opening based on the measured changes in the pressure.” (emphasis added).

The Examiner contends that Ollivier teaches these limitations at Col. 5 Line 20 – Col. 6 Line 22. However, the flow control system described in Ollivier specifically teaches away from fixing the aperture of the flow control valve (22) at a selected aperture opening after interruption the flow of gas using valve 14. Ollivier specifically states that “a batch of process gas is delivered from a source of pressurized process gas through the flow line 1 of the flow control system 10 to the semiconductor manufacturing apparatus 2 at a controlled flow rate for a delivery period of time,” which happens before valve 14 shuts off the flow of process gas from source 12. *See* Col. 5 Lines 52, Lines 56-60 of Ollivier (emphasis added). Ollivier goes on to say that “the pressure drop of the process gas in the reference capacity is measured ... while interrupting the flow of process gas ... and continuing to deliver process gas from the line of the flow control system to the semiconductor manufacturing apparatus 2 at the controlled flow rate.” *See* Col. 5 Lines 62-67 of Ollivier (emphasis added).

Therefore, the flow rate in Ollivier is kept controlled after the valve 14 interrupts the flow of gas. To accomplish this in light of the changing pressure caused by the interruption of the flow of gas, the aperture of the flow control valve 22 must be varied to keep the flow of gas at the controlled flow rate. Thus, Ollivier not only does not teach or suggest “[fixing] an aperture of the flow control valve mechanism at a selected aperture opening,” but Ollivier specifically teaches away from this limitation of claim 1 by necessitating that the aperture of the flow control valve be variable during the pressure measurement following the interruption of the flow of gas.

Furthermore, Ollivier also does not teach or suggest calculating “the deviation from the standard level associated with the selected [fixed] aperture opening based on the measured changes in the pressure.” In fact nowhere does Ollivier describe even storing or having sure standard level or pressure changes associated with specific aperture openings.

Thus, having several limitations not taught or suggested by Ollivier, claim 1 is allowable. Claims 2-5 are dependent on claim 1 adding further limitations, and are therefore also allowable. Independent claim 12 includes limitations substantially similar to allowable independent claim 1,

and is therefore also allowable. Claims 11-16 are dependent on claim 12 adding further limitations and are therefore also allowable. Independent claim 7 and 17, as amended, also contain limitations similar to independent claim 1. Therefore, claims 7, 17, and all claims dependent on these claims are also allowable.

III. REJECTIONS OF CLAIMS 2-5, 7, 9, 10, 12-17, 19 and 20 UNDER 35 U.S.C. § 103

Claims 2-5, 7, 9, 10, 12-17, 19 and 20 stand rejected under 35 U.S.C. § 103 as being unpatentable over Ollivier in view of Wilmer (US 5,865,205). Applicant believes that all pending claims are allowable for at least the following reasons. Withdrawal of the rejection is respectfully requested.

The system described in Wilmer is similar to the system described in Ollivier in that Wilmer teaches releasing process gas from a chamber while closing off the gas source and dynamically controlling the flow of gas from the chamber as the process gas is released from the chamber to correspond to a desired regulated gas flow rate. *See* Discussion of Ollivier Above, and further *See* Wilmer at Col. 6 Lines 9-10, and Lines 27-31. Thus, Wilmer – like Ollivier – expressly teaches away from the limitations of independent claims 1, 7, 12, and 17.

As discussed above, claim 1 requires a flow control device having a deviation measurement/control component that “fixes an aperture of the flow control valve mechanism at a selected aperture opening and measures changes in the pressure using the pressure detector while the channel is closed by the first opening and closing valve, and calculates the deviation from the standard level associated with the selected aperture opening based on the measured changes in the pressure.” (emphasis added). Claims 2-5 are dependent on claim 1 adding further limitations. Since Wilmer does not teach or suggest – in fact expressly teaches away from – the limitations of claim 1, claim 1 and its dependent claims are all allowable over Ollivier in view of Wilmer.

Independent claim 12 includes limitations substantially similar to allowable independent claim 1, and is therefore also allowable. Claims 11-16 are dependent on claim 12 adding further limitations and are therefore also allowable. Independent claim 7 and 17, as amended, also contain limitations similar to independent claim 1. Therefore, claims 7, 17, and all claims dependent on these claims are also allowable.

As set forth in the remarks above, the Applicants believe that all claims currently pending are in condition for allowance, and should now be allowed. Should the Examiner believe that a telephone conference would expedite the prosecution of this application, the undersigned can be reached at the telephone number set out below.

Respectfully submitted,
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